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REVISION OF *ARADELLUS* WESTWOOD (HETEROPTERA: REDUVIIDAE: HOLOPTILINAE)

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ABSTRACT

The following synonyms are made after re-examination of all described species of Australian endemic genus *Aradellus* Westwood: *A. distinctus* Montandon, 1907 with *A. cygnalis* Westwood, 1874; *A. pallidicornis* Montandon, 1907 and *Rhopalotrichius notatus* Miller, 1957 with *A. fulvus*, Montandon, 1907. Key to species is provided.

INTRODUCTION

Aradellus was described by Westwood (1874) as a new subgenus of *Holoptilus* Lepelletier and Serville based on the single new species *A. cygnalis* from Swan River, Australia. Lethierry and Severin (1896) listed it as a genus in their generic catalogue of Hemiptera. Montandon in 1907 described 3 new species, *distinctus* (Victoria), *fulvus* (locality unknown in Australia) and *pallidicornis* (New South Wales), and in 1910 *nigerrimus* (locality unknown in Australia).

Miller (1957) described *notatus* (south-east Queensland) as type-species of his new genus *Rhopalotrichius*, the latter synonymised with *Aradellus* by Wygodzinsky and Usinger (1963). Examination of the original description and the holotype revealed that this species is conspecific with *fulvus*, whereas the female paratype belongs to another species, *cygnalis*. I did not examine the male paratype.

The following abbreviations are used for the names of the museums and other institutions where the specimens are held:

AM	Australian Museum, Sydney
ANIC	Australian National Insect Collection, Canberra
NMV	National Museum of Victoria, Melbourne
QM	Queensland Museum, Brisbane
UQ	University of Queensland Insect Collection, Brisbane

All measurements are in millimetres.

Genus *Aradellus* Westwood

Aradellus Westwood, 1874, p.193 (type-species *A. cygnalis* Westwood, 1874, by monotypy).

Rhopalotrichius Miller, 1957, p.32 (synonymised by Wygodzinsky and Usinger, 1963, p.50).

The genus has adequately been described by Miller (1957) as *Rhopalotrichius*, and keyed from other genera of Holoptilinae by Wygodzinsky and Usinger (1963). Howevcr the following are additions:

Male genitalia — paramerc goose neck shaped (e.g. Fig. 2), aedeagus with basal portion of strut narrow plate-like, well projecting below base of apical portion of strut, which is long whip-like.

Included species:

Aradellus fulvus Montandon, 1907
A. nigerrimus Montandon, 1910

Key to the Species

1. Body above and hemelytron uniformly black or fuscous ..... *nigerrimus*
-. Body above and hemclytron not uniformly black and or fuscous 2
2. Hemelytral membrane with sub-basal broad fuscous area extending to anal margin, subapical fuscous spot large and elongate ..... *cygnalis*
-. Hemelytral membranc with sub-basal broad fuscous area not extending to anal margin, subapical fuscous spot small and spherical ..... *fulvus*

Aradellus cygnalis Westwood (Figs. 1-2)

Aradellus cygnalis Westwood, 1874, p.193.
Aradellus distinctus Montandon, 1907, p. 424. Syn. nov.

Type — Lectotype ♂, 5♀ paratypes in Hope Entomological Collections, University Museum, Oxford. Type of *A. distinctus* can not be located.

Distribution — Originally known from Swan River (? Western Australia) is here recorded from South Australia, Victoria, New South Wales and south-east Queensland.

Description — Following are additions to the original descriptions of *A. cygnalis*, and its synonym, *A. distinctus*:

Measurements are means with ranges in parentheses.

Total length (including hemelytron) 4.2 (3.8-4.7), body length 3.9 (3.8-4.4), maximum width 2.12 (1.96-2.30).

Head length 0.55 (0.54-0.58), width across eyes 0.90 (0.86-0.96), interocular space 0.59 (0.55-0.62), interocellar space 0.41 (0.39-0.45), eye-ocellar space 0.07 (0.07), eye length 0.17 (0.16-0.19) eye width 0.14 (0.14-0.15); length antennal segmcnts: I, 0.39 (0.37-0.43); II, 1.74 (1.67-1.82); III, 0.45 (0.43-0.50).

Pronotum length 0.83 (0.80-0.89), maximum width 1.73 (1.67-1.86); scutellum length 0.26 (0.23-0.28), width 0.64 (0.58-0.69).

Length hemelytron 3.02 (2.82-3.30), length corium 0.85 (0.80-0.87).

Male genitalia: paramcre (Fig. 2), aedeagus (Fig. 1).

Specimens Examined — **Australia**: Lectotype ♂, 5♀ paratypcs. **Victoria**: Lake Hattah, 7♂, 11♀, Pres. J. E. Dixon 6.xii.1925, J. E. Dixon Collection Don. Jan. 1940, in NMV; Melbourne, 2♀, in NMV; Macleod, 2♂, 5.viii.1923, J. E. Dixon Coll. Don. Jan. 1940, in NMV; Bright Valley, 1♂, H. W. Davey, in SAM; Kiata, 1♂, 1♀, 2 nymphs, x.1928, F. E. Wilson, in NMV; Mooroopna, 2♂, 1♀, 1.i.1921, F. E. Wilson, in NMV; Mooroopna, 1♂, i-ii.1937, D. F. Waterhousc, in ANIC; 1♀, 'From C. French Jun. 15.11.11', in NMV.

New South Wales: Dubbo, 1♀, xi.1928, 1♂, 3♀, ii.1929, A. J. Barrett, in AM; Yanco, 2♂, 2♀, 19.x.1932, K. C. McKeown (K 65609), in AM; Forbes, Sydney, 1♀, 24.v.1925, W. W. Froggatt, in ANIC; Albury, 1♂, in SAM; Candowindra, 1♀, 3.i.1955, F. E. Wilson; Deniliquin, 1♂, 2♀, 1926, redgum, W. W. Froggatt Coll., in ANIC; Hay, 1♂, 1915, W. W. Froggatt Coll., in ANIC; Wyoming station N. of Lightning Ridge, 1♀, 28.ix.1972, in ANIC; Wagga, 1♂, 5.xi.1899, in Hungarian Natural History Museum, Budapest.

Queensland: Brisbane, paratype ♀ of *Rhopalotrichius notatus*, 2.viii.1937, A. J. S. (H.136), in UQ; 30 km S.E. of Gayndah, 2♂, 1♀, 17.vii.1968, L. A. Mound, in UQ.

South Australia: Lucindale, 1♀, A. M. Lea, 2♀, F. Secker, in SAM.

Notes — Some of the specimens examined were sent to the Hope Entomological Collections, where Dr. I Lansbury kindly compared them with the lectotype and supplied me with the outline drawings of the genitalia of the latter. The type of *A. distinctus* can not be located, and is possibly lost. However its original description agrees with *A. cygnalis* in all the major details.

There is slight variation in the intensity of coloration of body and appendages and in the arrangement of setae among the specimens examined. Most of the differences discussed by Montandon (1907 and 1910) between this species and *A. distinctus* are other minor variations found among the specimens examined in the present study. The difference in the nature of the attachment of the 3rd segment of the antenna, pointed out by Montandon was based only on an undetailed drawing of Westwood. Based on the details explained above I have synonymised *A. distinctus* with *A. cygnalis*.

Aradellus fulvus Montandon (Fig. 3)

Aradellus fulvus Montandon, 1907, p.426.
Aradellus pallidicornis Montandon, 1907, p.426. Syn. nov.
Rhopalotrichius notatus Miller, 1957, pp.33-34, Syn. nov.

Types — Holotype ♂, in Institute Royal des Sciences Naturelles de Belgique; lectotype ♂ of *A. pallidicornis*, in Hungarian Natural History Museum, Budapest; holotype ♀ of *Rhopalotrichius notatus*, in British Museum (Natural History), London.

Distribution — Known from Western Australia, South Australia, Victoria, New South Wales and Queensland.

Description — The species has been adequately described in the original descriptions of above listed species. However following are the additions:

Measurements are of the holotype ♂ *A. fulvus*, holotype ♀ *R. notatus*, followed by ranges of other specimens measured in parentheses.

Total length (including hemelytron) 4.6, 3.8 (3.5-3.9), body length 4.0, 3.5 (3.0-3.7), maximum width 2.20, 1.95 (1.68-1.96).

Head length 0.62, 0.50 (0.42-0.55), width across eyes 0.89, 0.78 (0.74-0.84), interocular space 0.54, 0.46 (0.46-0.50), interocellar space 0.46, 0.30 (0.31-0.37), eye-ocellar space 0.11, 0.08 (0.07), eye length 0.13, 0.15 (0.15-0.18), eye width 0.15, 0.18 (0.14-0.16); length antennal segments: I, 0.27, 0.27 (0.27); II, 1.67, 1.41 (1.42-1.43); III, 0.46, 0.42 (0.39-0.48).

Pronotum length 0.97, 0.74 (0.62-0.69); maximum width 2.06, 1.63 (1.36-1.50); scutellum length 0.30, 0.23 (0.20-0.24), width 0.85, 0.70 (0.56-0.60); length hemelytron 3.31, 2.90 (2.82-2.98), length corium 1.05, 0.80 (0.71-0.72).

Male genitalia: paramere (Fig. 3), aedeagus as in *A. cygnalis*.

Specimens Examined — **Australia**: Holotype ♂, 'Coll. R.I.Sc. N.B. Coll. Camille, Van Volxem. 3682'. **? Western Australia/Tasmania**: King George's Sound, 1♂, in AM. **Western Australia:** Dryandra State Forest via Narrogin, under bark of *Eucalyptus wandoo*, 1♂ and 3 nymphs, 27.iii.1983, A. Postle, in Northern Territory Museum, Darwin. **South Australia**: Bower, 1♂, 14.viii.1959, G. F. Gross and P. Aitken, in SAM; Murray R., 1♀, H. S. Cope, in SAM; Pt. Lincoln, 1♂, Lea, in SAM; Flinders Ranges, 10 km E. of Parachilna, 1♂, 15.viii.1969, G. B. Monteith, in UQ. **Victoria**: 1♀, in Hungarian Natural History Museum, Budapest; Bendigo, 1♂, F. E. Wilson, in NMV. **New South Wales**: Narrabri, 1♀, 5.xi.1932, K. C. McKeown, in AM; Bathurst, lectotype ♂ of *A. pallidicornis*, 3.x.1902, W. W. Froggatt, in Hungarian Natural History Museum, Budapest, 1♂, same locality and collector, in ANIC; Euston, 1♀, 3. x.1928, W. W. Froggatt, in AM. **Queensland**: Blackdown Tableland via Dingo, 1♀, 1-6.ii.1981, G. B. Monteith, in QM; Cunnamulla, 2♂, x.1944, N. Geary, in AM; Gympie, holotype ♀ of *Rhopalotrichius notatus*, ... 1947, C. Clark, in British Museum (Natural History), London.

Notes — Among the specimens examined there is considerable variation in the intensity of colouration of body and appendages and in the arrangement of setae on head and antennae.

Aradellus nigerrimus Montandon (Fig. 4)

Aradellus nigerrimus Montandon, 1910, p.71

Type — Holotype ♀, in National Museum of Natural History, Smithsonian Institution, Washington.

Distribution — Known from Victoria and New South Wales.

Description — Following are additions to the original description:

Measurements are of the holotype, followed by ranges of other specimens examined in parentheses.

Total length (including hemelytron) 4.4 (4.1-4.3), body length 4.2 (3.9-4.2), maximum width 2.28 (1.98-2.28).

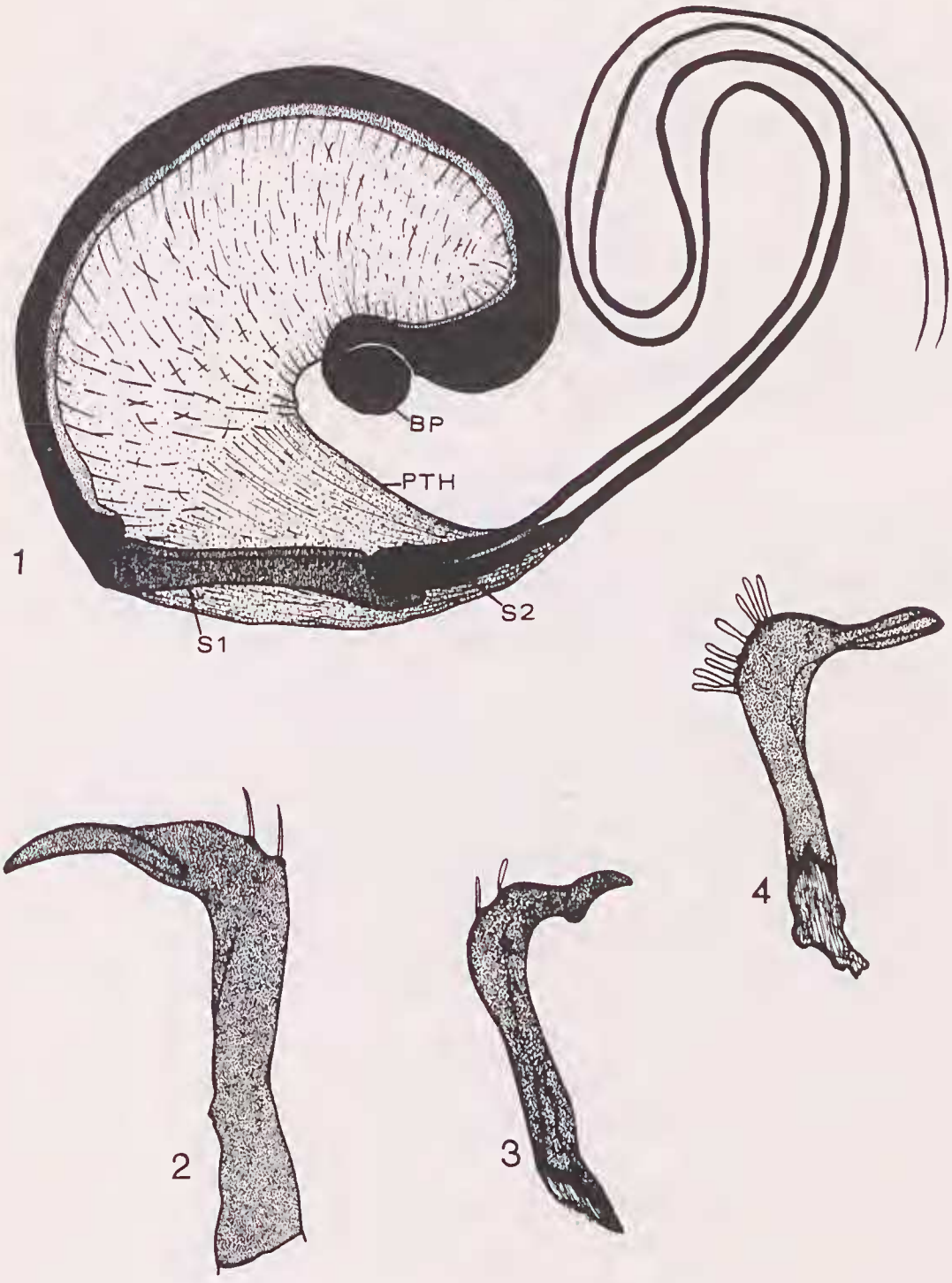
Head length 0.66 (0.62-0.66), width across eyes 0.76 (0.70-0.74), interocular space 0.54 (0.46), interocellar space 0.34 (0.28-0.35), eye-ocellar space 0.10 (0.07-0.08), eye length 0.16 (0.15-0.18), eye width 0.11 (0.11-0.15); length antennal segments I, 0.42 (0.42-0.43); II, 1.54 (1.51-1.67), III, missing in type (0.54-0.58).

Pronotum length 0.78 (0.78-0.85), maximum width 1.75 (1.67-1.75); length scutellum 0.39 (0.31), width 0.62 (0.58); length hemelytron 2.98 (3.06-3.23), length corium 1.05 (0.87-0.90).

Male genitalia: paramere (Fig. 4), aedeagus as in *A. cygnalis*.

Specimens Examined— **Australia**: Holotype ♀, 'Austral.'; P. R. Uhler Collection'; '003'. **Victoria**: Hall's Gap, Grampian Ra., 1♀, 2.i.1966, B. Cantrell, in UQ; Koala Park, Creswick, bark of *E. viminalis*, 1♂, 22.iv.1966, I. Leversha, in NMV. **New South Wales**: Hornsby, 2♀, C. Gibbons (K51051), in AM.

Notes — Differs from the other species of the genus in the characters in the key.



Legends for Figures

Figs. 1-4 *Aradellus* spp.: 1-2, *cygnalis* lectotype ♂ - 1, aedeagus, 2, right paramere; 3, *fulvus* ♂ left paramere; 4, *nigerrimus* ♂ left paramere.

(abbreviations: BP, basal plates; PTH, phallotheca; S1, basal portion of strut; S2, apical portion of strut).

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Resumé

Les espèces endemiques australiennes du genre *Aradellus* Westwood (Heteroptera: Reduviidae) est revisée. *A. distinctus* Westwood, 1874, est considerée être synonyme de *A. cygnalis* Westwood, 1874, et *A. pallidicornis* Montandon, 1907, et *Rhopalotrichus notatus* Miller, 1957, sont synonymes de *A. fulvus* Montandon, 1907. Une clé aus trois espèces maintenant reconnues est pourvue.

Literature Cited

Lethierry, L. and G. Severin (1896). Catalogue général des Hémiptères. Brussels. Vol. 3, 1-275.

Miller, N.C.E. (1957). New genera and species of Ethiopian, Mascarene and Australian Reduviidae (Hemiptera: Heteroptera) in the British Museum (N.H.), London. *Bull. Br. Mus. (Nat. Hist.) Entomol.*, **5:** 31-81.

Montandon, A. L. (1907). Notes sur les Holoptilidae. *Ann. Mus. Nat. Hung.*, **5:** 414-427.

Montandon, A. L. (1910). Nouvelles contributions à l'étude des Holoptilidae. *Societatea romana de stiinte. Bucharest Buletinul*, **19:** 67-73.

Westwood, J. O. (1874). *Thesaurus Entomologicus Oxoniensis*, 1-205, pl 1-40.

Wygodzinsky, P. and R. L. Usinger (1963). Classification of the Holoptilinae and description of the first representative from the New World (Hemiptera: Reduviidae). *Proc. R. ent. Soc. Lond. (B).*, **32:** 47-52.